

## QAR Fall 2013 Field Season Weekly Reports

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*and*

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### Introduction to Fall 2013 Field Season

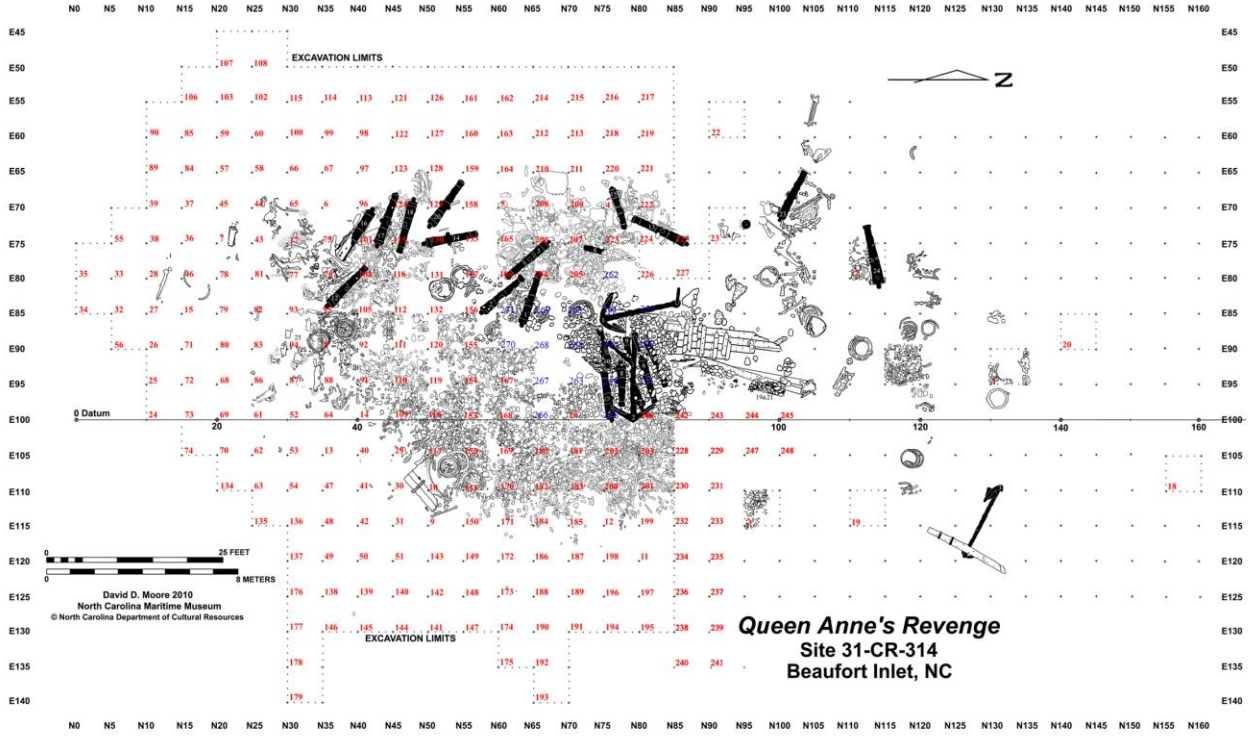
The 2013 QAR Fall Field season is underway! Beginning August 5, a team of archaeologists and conservators from the Underwater Archaeology Branch (UAB) of the North Carolina Department of Cultural Resources (DCR) is conducting a three-month long excavation of Blackbeard's flagship near Beaufort, North Carolina, with the help of graduate students from East Carolina University (ECU). Two cannon were recovered from the site in June with the help of Cape Fear Community College, and we are hopeful that there will be even more cannon in store for the fall!

Billy Ray Morris, QAR Project Director and head of UAB, is overseeing the excavation, along with UAB Archaeologists Nathan Henry and Chris Southerly. Captain and Dive Safety Officer Julep Gillman-Bryan is not only captaining R/V *Jones Bay*, our dive platform for this season, but is also making certain that divers follow proper safety procedures. Dave Moore, Curator of Nautical Archaeology for the NC Maritime Museum at Beaufort (and authority in all things Blackbeard) is expertly mapping the site and lending us his knowledge of 18<sup>th</sup>-century ship construction. Conservators Shanna Daniel and I from the QAR Conservation Lab located at ECU are on hand to ensure the safety and handling of each object during excavation, recovery, and transport to the lab. Current ECU graduate students Laurel Seaborn, BJ Howard, and Danny Bera, and ECU graduate Matt Thompson are serving as archaeological technicians and aiding in recovery efforts. Interns Greg Stratton, Jeremy Borelli, Jeneva Wright, and Nicole Wittig, all current ECU graduate students, are on site to support operations.

The main goal for this season is to address the massive concretion marking the midships area of the wreck site. "The Pile," as this landmark is colloquially named, is made up of a large anchor lying atop seven cannon. The immense amount of iron concentrated in this area has provided a host of nutrients for sea life, which in turn has supplemented the amount of encrustation surrounding the artifacts, essentially turning eight separate iron objects into one giant mass. Excavation of the pile will require hammers and chisels used with the utmost care. It will be tedious and time-consuming, and will hopefully provide an array of objects trapped within the concretion. Additionally, new excavation units will be opened around the pile as well as north of it as work continues toward the bow of the ship.

We are always most hopeful to find the actual wooden structure beneath what we can now see, and with work continuing around the pile, it is very promising that hull remains may have been protected by the cannon lying on top. This season will focus on recovering some of those cannon as they become chiseled free, as well as any potential hull remains. Hopefully, we will also have an opportunity to raise two cannon and two large cask hoop concretions, which the un-cooperative June weather prevented us from collecting.

All images were captured by DCR/QAR staff, unless otherwise noted.



Site plan for the *Queen Anne's Revenge* shipwreck with new excavation units shown in blue.

## Weekly Updates

### *Week 1: August 5-9*

The opening week of the 2013 field season saw the team gathering supplies and readying R/V *Jones Bay* for diving. Once divers were in the water, we started laying gridlines over the pile and labeling new units nearby (246, 255-271). The grid system not only aids the archaeologists in meticulously mapping in each artifact on the site plan, but the numbered squares also help divers to figure out where they are on those particularly low-visibility days. Another new feature for this season is a set of white buoys attached to the ring of Anchor 2 (A2). It's yet another assurance of relative location when you descend into the murky water. It's nice to know where you are!

Billy Ray, Chris, Nathan and Julep all came up from Fort Fisher and were joined by Dave from NCM and Shanna and me from the QAR lab. Our four technicians, Laurel, Danny, BJ and Matt were aided in their work by interns Greg, Jeremy, and Jeneva. Although the weather was a bit overcast, the team managed to get four diving days on site and accomplished much!



From left to right: Interns Jeremy, Jeneva, and Greg.

### *Week 2: August 12-16*

The team ushered in the second week by placing sandbags around the perimeter of new excavation units we intend to excavate in 2013. Also, as part of an ongoing corrosion study, Danny and BJ located the artifacts anchor A2, cannon C-6, C-7, and C-8, which had all been outfitted with sacrificial zinc anodes. They drilled through the concretion to expose bare metal, and using an electrode, measured each artifact's pH and corrosion potential, the figures for which will hopefully reflect that the anodes are performing as they should be in slowing down active corrosion. The electrodes' cables were connected to meters being monitored by conservators, Shanna and me, on the deck of *Jones Bay*.



Danny preparing the drill.



Shanna (right) and me (left) feeding cables to Danny and BJ on the bottom in order to take pH and corrosion potential readings.



Greg (left) and Matt (right) recovering cannon C-26.



Even though we lost two days to bad weather, I used that time to instruct Jeremy and Jeneva on how to process dredge spoil and seek out the small artifacts that are commonly found hiding in the sediment. Upon returning to site on Thursday, divers began removing ballast stones concreted to the pile, with the hopes that we can understand how to go about separating the large artifacts from each other. On Friday, we raised two cannon, C-26 and C-27, both 2-pounders which had only been located in the previous field season. They were delivered to the lab and are currently keeping each other company in the same tank. We also had to say our goodbyes to one of our interns, Jeneva. She was such a great part of the team, and we will all miss her!



Cannon C-26 and C-27 loaded onto the trailer and ready to be delivered to the QAR lab.

### *Week 3: August 19-23*

Divers surfaced on Monday with the exciting news of a previously unknown cannon lying within the immense concretion that makes up the pile. This new cannon, which is estimated to be a 2-pounder based on its size, brings the cannon grand total to 28! That makes the eighth cannon on the pile itself. Our numbers seem to be edging closer and closer to the 40 cannon purportedly on the QAR at the time of grounding. Will we find all 40?

Tuesday, we were able to raise two large concretions using the davit, one containing two lead sounding weights and a deadeye strap, and the other concretion containing two massive deadeye straps. It's always exciting to find pieces of the ship's rigging!



Recovering the deadeye strop concretion.



US Coast Guard crane operators removing the sounding weight concretion from *Jones Bay*.



Heavy concretion with 2 large lead sounding weights visible (bottom).

Wednesday, we moved the dredges to units 244, 245, 247, and 248, where cannon C-26 and C-27 were found. After removing the sandbags and overburden, the smaller dredges were employed so that sediment could then be collected in the sluices on deck. Unfortunately, the winds turned again, so we spent Thursday and Friday on shore. At least it allowed time for Greg, Jeremy, and me to count and weigh all the ballast stones raised so far and put them in storage. It cleared up some much needed space on the dock at Fort Macon.



Greg (left) and BJ (right) lowering the dredge to the seabed.



The visibility has been improving, and with all this close-up time with the pile, we have been spotting a certain curious octopus lurking. Julep has even gotten some video of him. Unfortunately, he is going to have to be evicted from his home on the pile so we can get to work!

*Week 4: August 26-30*

Various small finds are finally coming to light during the fourth week of work on site. Greg identified a brick fragment just underneath cannon C-7 in unit 246, and he also very carefully lifted and recovered a fragment of pine sacrificial hull planking in unit 270! We hope this is a good indicator of what may still be buried in nearby units.



Brick fragment.



Fragment of pine sacrificial planking.



We have been lucky this week in observing a number of local wildlife species. I spotted a sting ray just west of anchor A2, Julep managed to get more video footage of the octopus still lurking around the pile, Danny was very excited by a dolphin escort one morning while we were headed out, and flounder are beginning to appear around the site.



Morning dolphin escort.

Finally, a large batch of artifacts raised over the course of the previous three weeks was delivered to the QAR Lab in Greenville on Friday. Since so many of the concretions were oversized and too heavy for us to physically load them onto the trailer, we made use once again of the US Coast Guard's team of crane operators to assist us. Two cask hoop concretions, the lead sounding weight concretion, a deadeye strop concretion, and a nail concretion were all loaded quickly and efficiently, and all the boxes of smaller finds were loaded up and transported to the lab.



Nail concretion shortly after recovery.

We lost Greg and Jeremy with the end of the week – they were a tremendous help on site and will be sorely missed!

*Week 5: September 3-6*

After a three-day weekend, we returned to site with the focus of separating the individual elements that make up the pile. A large anchor, A2, lies atop 8 cannon, and due to a large concentration of iron, the cannon and anchor have concreted together to form one massive conglomerate. We began chiseling this week, first using an old fashioned hammer and chisel, but it quickly became apparent that the immense concretion was too thick to attack with man-power alone. A pneumatic chisel attached to an air compressor on the deck of R/V *Jones Bay* proved to speed up the process, and we are definitely making some headway. The pneumatic chisel has made it much easier to map and remove cannon balls and ballast stones as we come upon them lodged deep within the concretion.

We also managed to raise two large cask hoop concretions and another unidentifiable concretion, along with an assortment of small objects and get them all transported back to the lab. Another very productive week for the team, considering we only worked three days because of Labor Day and one bad weather day! The seas flattened out entirely on Thursday, and by Friday, the visibility climbed to 15 feet. All the divers marveled at the rare opportunity to be able to see the entire wreck site upon descent.



Raising a cask hoop concretion.



A beautiful day with calm, glassy waters.

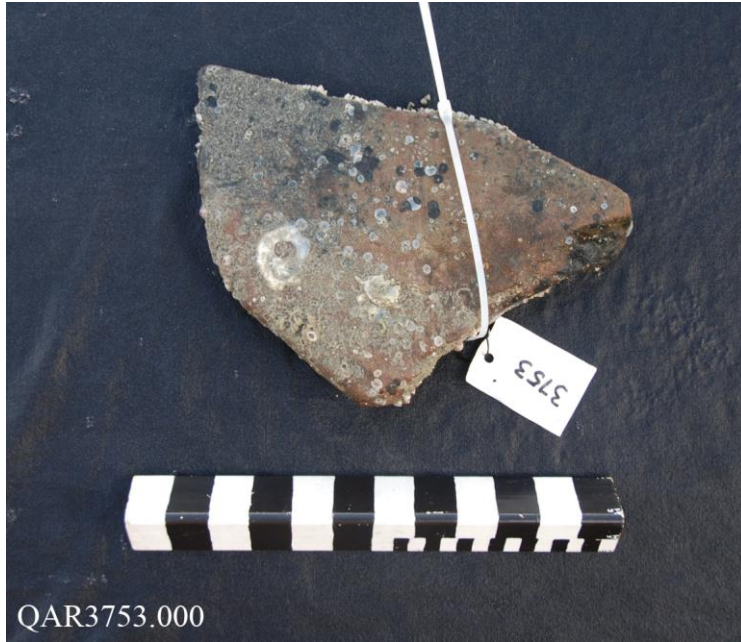
Our team grew this week with the addition of ECU graduate student Nicole. We are excited to have her on board for the remainder of the fall season!

#### *Week 6: September 9-13*

With the weather noticeably shifting from summer to fall, the team focused on preparing 4 cannon and 2 large cask hoop concretions for their eventual removal from the seabed, hopefully before the end of the 2013 season. Two cannon had already been relocated from their original resting places to the south end of the site for the big cannon lift this June, but we had to dig them out from the sand overburden which had been re-deposited in the last 2 months. They were then outfitted with straps and now await the day when we can secure a boat to help us lift them. The same procedure was followed with two very massive clusters of cask hoops, the largest of which measures a whopping six feet, four inches in length!

The goal for the season is also to raise cannons C-1 and C-6, and we spent three days this week assessing that possibility and chiseling around them to make certain that their removal will not disturb any other fragile objects nearby. By the end of the week, the team noticed and documented hull remains near both of these cannon! Because of this, work slowed in order to carefully map in the wood, and we also found a fragment of tile, which probably would have been part of the ship's galley. The small things are what really make our work worthwhile and give us glimpses into the lives of the sailors aboard the vessel.





Portion of tile found near cannon C-1.

Friday was spent making some minor repairs to *Jones Bay*, and so everyone returned home a little earlier for a restful weekend.

*Week 7: September 16-20 (By Shanna Daniel, QAR Conservator)*

We have just passed our half way point in our 12-week field season and are heading to the finish line, but we are still going strong! Week 7 was a productive week with good weather and wonderful visibility on site. This week, divers concentrated on separating Cannon C6 from “The Pile” using hand-held pneumatic tools. Once the cannon was removed, divers strapped it and using lift bags, moved the cannon underwater to the south side of the site. It takes skill and caution when moving cannon and all divers involved did a flawless job!

One other exciting event occurred this week. Shanna Daniel, QAR Conservator, has worked on the site for over 6 years but had never seen the site herself. She recently obtained her Open Water certification, so Julep Gillman-Bryan, R/V *Jones Bay* captain and UAB Dive Safety Officer, did a check out dive with her to show her what she’s been missing. Finally, Shanna went down with Julep and got to see the actual wreck for the very first time!!



Shanna diving on the QAR wreck site for the first time.

*Week 8: September 23-27 (By Shanna Daniel, QAR Conservator)*

The main focus for Week 8 was separating Cannon C1 and C8 from the “The Pile”. This involved using both the 5 inch and 3 inch dredges to remove sediment around the cannon then using hand-held pneumatic tools to begin chiseling through the dense concretion holding the cannon in place. Unfortunately, Cannon C1 and C8 will take more time to separate than archaeologists thought, and we will have to continue to excavate and move them the following week. One exciting find was a copper alloy powder ladle, which was recovered from the concretion surrounding Cannon C1. This piece was instrumental in loading cannon. It would have been attached to a long wooden rod with the rammer on the other end and served to load the gun powder into the cannon.

QAR3831.000



Copper powder ladle with concretion still attached.

We did have a guest aboard R/V *Jones Bay* this week. Dr. Gordon Watts, underwater archaeologist and owner of Tidewater Atlantic Research (TAR) in Washington, North Carolina, was able to make it out and dive on the site. It was great to have him out there and hope he comes out again.

*Week 9: September 30 – October 4*



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Copper alloy serpentine side plate.

As we progress further into the season, we are really making headway on site! On Tuesday, cannon C-8 was finally dislodged from the pile after several weeks of concentrated chiseling. Hopefully, in the following week, it can be relocated to the south end and prepared for recovery.



BJ surfaced on the same day with a small artifact – a copper alloy serpentine side plate. This object would have added a decorative flourish to a sailor’s musket.

On Wednesday, Matt and Jim spotted two objects west of the anchor, which necessitated my own close inspection. The lower portion of a glass bottle and the neck and handle belonging to a ceramic jug were almost hidden among the sand and concretion in unit 262. With some gentle hand-fanning, I was able to uncover and raise these two delicate fragments, which the team was eagerly awaiting at the surface. Finds like these are important, because they may be able to tell us what the crew was eating and drinking on board the ship.



Fragment of a dark green glass bottle.



Neck and handle of ceramic jug.

Thursday, Billy Ray, Chris, Jim, and Matt relocated cannon C-1 at the south end of the site to join cannons C-6, C-14, and C-17, all ready for collection. Laurel, Nicole, and Danny focused on dredging and removing ballast from units 266 and 267, while Dave mapped artifacts within those units. While finishing unit 266 the following day, Laurel made yet another exciting discovery – a nearly intact pewter plate! It was a good week for small finds!



Pewter plate found in unit 266.

#### *Weeks 10-11: October 7-18*

The team had such high hopes for these past two weeks! Unfortunately, the weather had other plans, and we lost a total of 8 out of 10 working days on site. It was devastating, but we must carry on...

Since Week 10 was a complete wash, we returned to Beaufort on October 14 hoping to get back in the water. The team had to wait until Wednesday, when the wind and waves finally calmed enough for us to get *Jones Bay* out of the basin. We used the good weather to our advantage while we were able to and lifted a large deadeye strap concretion that had been tagged on the seabed for the last few seasons. Greg Stratton, one of our interns for the month of August, returned for the week in order to help out.

We also carefully lifted a few fragments of the waterlogged remains of the wooden hull. After being submerged in water for nearly 300 years, the wood has softened, so the utmost care is needed in removing the fragile planks from the sandy seabed. After removing the wood, we were able to close out two more units – Unit 16 and Unit 263. Unit 16 was initially begun as a test pit when the site was first being explored in 2005 and 2006. We returned to this unit to fully map and recover all the artifacts and dredge it this season.



Large deadeye strap concretion.



A portion of the pine outer planking, called sacrificial planking.

Friday morning, we were on the boat at 6:30 AM with the hopes that we would have a nice clear day to work and prepare cannon C-8 for moving. Once again, nature foiled our plans, and when Laurel and Billy Ray jumped in, it was utter darkness in the water column with so much particulate even at high tide. When moving something so large and heavy, we want the environment to be as safe as possible, and with such little visibility, we had to cancel our plans for the day. At least we got to see a beautiful day dawning on Beaufort Inlet!





Sunrise over the water.

*Week 12: October 21-25*

The temperatures are really dropping for us on site, and this week, Danny installed an electric kettle and started supplying everyone with coffee, hot chocolate, and tea after we get out of the water. Folks, sometimes it's the little things that keep us going.



Always a good idea.

First thing Monday morning, the team eagerly jumped in the water and moved cannon C-8 to the south end of the site with the other 4 cannon previously staged there. We have received word from Commander Scott McAloon from the US Coast Guard Cutter *Smilax* that they are willing and able to help us raise our 5 cannon and 2 massive cask hoop concretions on Monday, October 28! It is going to be a big day, and we will need to make plans in preparation for it.

After C-8 was relocated, the team began dredging the units directly underneath it – Units 255 and 256. We were thrilled to find large sections of both oak and pine planks lying beneath cannon C-8. I led the wood recovery crew consisting of Danny and Nicole, and the three of us raised all the planks that were freed now that C-8 was out of the way. One section of pine planking was over 7 feet long!



A small section of oak planking.

With the closure of Units 255 and 256, the team officially closed the excavation season just in time for high winds to return on Wednesday. Divers began cleaning up the wreck site on Thursday, removing gridlines and other snag hazards that might cause problems to passing boats and wildlife over the winter months. We also packed up all the remaining artifacts and returned home by the end of the day.

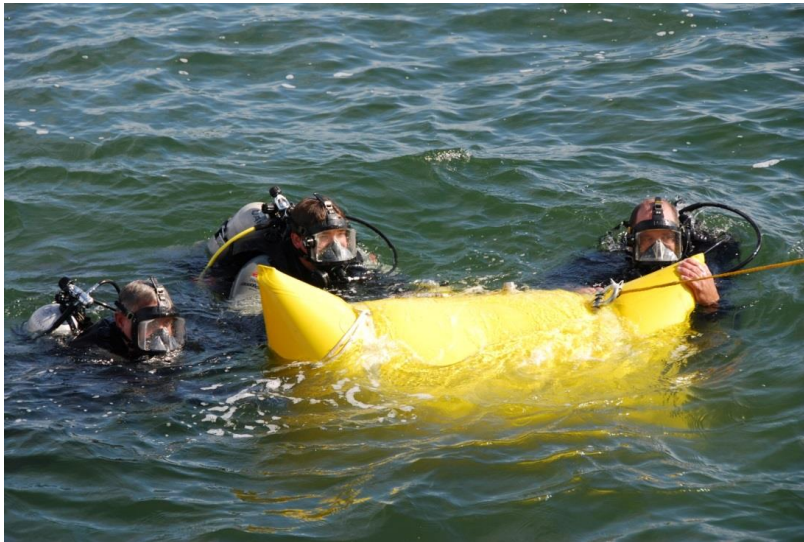
The coming week is going to be a big one, and hopefully the weather will continue to cooperate so that we can have a safe and productive lift day!

#### *Week 13: October 28 – November 1*

The big day finally arrived! We set out first thing Monday morning, the divers aboard *Jones Bay*, and conservators along with local press and DCR photographers aboard USCG Cutter *Smilax*, with the goal in mind of raising 5 cannon and 2 large cask hoop concretions. The weather was perfectly in our favor, and unlike our last big lifting operation in June, the cannon had not been reburied by the very active sediments in the inlet, so divers were able to get to work on rigging the guns with balloons. Everything came together like clockwork, and with the help of all the crew of *Smilax*, we had all 5 cannon on deck before lunchtime! The amazing cook prepared a hearty hot lunch of linguini with your choice of grilled chicken or shrimp, so we all ate readily so that we could get to work retrieving the 2 cask hoop concretions. Just after lunch, they were both brought up without any major issues, and we headed back into shore to celebrate a majorly successful day.



The first cannon breaking the surface.



Jim, Danny, and Nathan swimming a cannon over to *Smilax*.





The smaller of the 2 cask hoop concretions on deck.



Shanna, very happy after a successful lifting operation.



The crew of *Smilax* and the QAR staff with the 5 cannon back in port after 295 years on the seabed (Photo by Karen Blum).

The rest of the week was spent breaking down our dockside equipment and getting everything cleaned up and put away until we need it again for the 2014 Field Season!



Conservators putting the cannon in their tanks at the QAR Lab in Greenville.

## **Summary**

Over the course of 13 weeks this season, 5 cannon, 2 cask hoop concretions, and 369 other QAR numbers, including concretions, sediment to process, and wood fragments were raised. We were able to close out 5 units and concentrate a lot of time on perfecting a method for chiseling apart large objects concreted together. Weather, as usual, was a contributing factor in lost working days, but the team came together to get quite a lot achieved this season.

## **Acknowledgments**

The QAR 2013 Fall Field team owes a tremendous debt of gratitude to a number of organizations in providing the support we need to get underway. North Carolina Division of Marine Fisheries was generous enough to lend us the R/V *Jones Bay* for use as a dive platform, which we have been able to customize to serve our needs. The US Coast Guard has very graciously allowed us dock space at Fort Macon to use as a home base, and we could not have gotten many of our large objects loaded into our truck without their very eager team of crane operators. Cape Fear Community College once again offered to aid us in recovering large objects, like anchors and cannon, when they were available to do so. Fort Macon State Park offered affordable housing during September and October, and the Friends of QAR helped with financial assistance. We feel incredibly fortunate to have everyone's support!